

Model

920402 - Sno-Tek 24E (SN 175000 +)

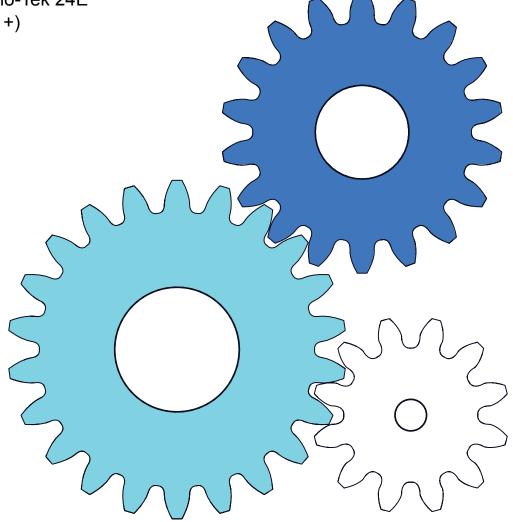






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Before operating or servicing the unit, carefully and completely read the Operator's Manual and engine manual provided with the unit at time of purchase. They contain important safety instructions and information about unit controls.

Have Questions or Need Assistance? www.ariens.com 920-756-4688

To find your nearest authorized Ariens service dealer, visit ariens.com and click "Where to Buy".

A Parts Manual and an Operator's Manual for your unit is available for free download or purchase at www.ariens.com.

Ariens recommends using only genuine Ariens replacement parts on this unit. Using unauthorized parts may adversely affect the performance, durability or safety of this unit and may void the warranty. Installing unauthorized parts will not automatically void the warranty; however, the warranty will not apply if the installation and use of unauthorized parts damages the unit. The Ariens warranty applies solely to defects in Ariens materials and / or factory workmanship. Ariens disclaims liability for any claims or damages – whether warranty, property damage, personal injury or death – arising from using unauthorized replacement parts.

Be aware of your mechanical aptitude when applying information in this manual for service and / or repairs. If you are not comfortable or capable of completing service and /or repairs to the machine, take the machine to an authorized Ariens service dealer.

SAFETY

Read these safety rules and follow them closely. Failure to follow these rules could lead to loss of control of unit, severe personal injury or death to you or bystanders, or result in damage to property or the machine.

PRACTICES & LAWS

Practice usual and customary safe working precautions. Learn applicable rules and laws in your area. Always follow the practices set forth in this manual.

REQUIRED OPERATOR TRAINING

The original purchaser of this unit was instructed by the seller on safe and proper operation. If unit is to be used by someone other than the original purchaser, loaned, rented, or sold, ALWAYS provide this manual and any needed safety training before operation.



WARNING: AVOID INJURY. This snow thrower is capable of crushing or amputating body parts. Failure to observe the safety instructions in the manuals and on decals could result in serious injury or death.

ALWAYS disengage auger, stop unit and engine, remove key and allow moving parts to stop before leaving operator's position.

SAFETY ALERT SYMBOL



This is the safety alert symbol. It means:

- ATTENTION!
- YOUR SAFETY IS INVOLVED!

When you see this symbol:

- BECOME ALERT!
- OBEY THE MESSAGE!

SIGNAL WORDS

The safety alert symbol above and signal words below are used on decals and in this manual. Read and understand all safety messages.

1. Danger



DANGER: Indicates an IMMINENTLY HAZARDOUS SITUATION! If not avoided, WILL RESULT in death or serious injury.

2. Warning



WARNING: Indicates a POTENTIALLY HAZARDOUS SITUATION! If not avoided, COULD RESULT in death or serious injury.

3. Caution



CAUTION: Indicates a POTENTIALLY HAZARDOUS SITUATION! If not avoided, MAY RESULT in minor or moderate injury. It may also be used to alert against unsafe practices.

4. Notice

NOTICE: Indicates information or procedures that are considered important but not hazard related. If not followed, property damage could result.

5. Important

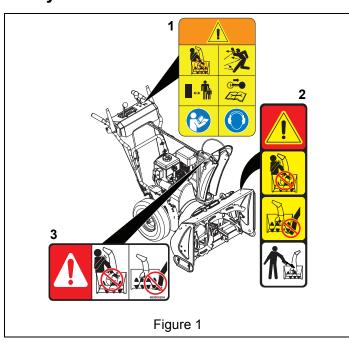
IMPORTANT: Indicates general reference information worthy of special attention.

SAFETY DECALS

The safety decals on your machine are visual reminders of the important safety information in this manual. All messages on your unit must be fully understood and carefully followed. Safety decals on the machine are explained below.

Always replace missing or damaged safety decals. Replacement decal information is in the parts manual for your machine. Decals can be ordered from your dealer. See Figure 1 for safety decal locations.

Safety Decal Locations



Safety Decal Descriptions

1. CAUTION!



Danger!



Only use clean-out tool to clear blockages. NEVER use your hands.



NEVER direct discharge towards persons or property that may be injured or damaged by thrown objects.



Keep people away from unit while operating. Keep children out of work area and under watchful care of a responsible adult.



Stop engine, remove key, and read manual before making any repairs or adjustments.



Read Operator's Manual.



Wear appropriate hearing protection.

2. DANGER!



Danger!



ROTATING PARTS! Only use clean-out tool to clear blockages. NEVER use your hands.



High-speed auger/impeller rotates below discharge opening. Wait for all moving parts to stop before removing clogs or servicing.

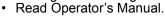


3. DANGER!



Danger!

ROTATING PARTS! Keep clear of auger while engine is running.





- Allow operation only by properly-trained adult, never children.
- Stop engine and remove ignition key prior to leaving the operator's position for any reason.



- Keep all controls, guards and safety devices properly serviced and functional.
- NEVER direct discharge towards persons or property that may be injured or damaged by thrown objects.

SAFETY RULES

The following safety instructions are based on the B71.3 specifications of the American National Standards Institute in effect at the time of production.

Training

Read, understand and follow all instructions on the machine and in the manual(s) before operating this unit. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.

Never allow children to operate or play on or near the equipment. Never allow adults to operate the equipment without proper instruction.

Keep the area of operation clear of all persons, particularly small children. Be alert and shut off unit if children enter area.

Exercise caution to avoid slipping or falling, especially when operating the snow thrower in reverse.

Always remove key and/or wire from spark plug before assembly, maintenance or service. Unintentional engine start up can cause death or serious injury.

Complete a walk-around inspection of the unit to understand the unit, your work area and all safety decals.

Understand how to operate all controls, the functions of all controls and how to STOP in an emergency.

Preparation

Always check overhead and side clearances carefully before operation.

Always be aware of traffic when operating near streets or along curbs.

Thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards, toys, wires and other foreign objects.

Disengage all clutches and shift into neutral before starting the engine.

Use extension cords and receptacles as specified by the manufacturer for all units with electric drive motors or electric starting motors.

Handle fuel with care; it is highly flammable.

- · Use an approved fuel container.
- · Never add fuel to a running engine or hot engine.
- Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground, away from your vehicle, before filling.
- When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
- Keep the nozzle in contact with the rim of the fuel tank or container opening at all times, until refueling is complete. Do not use a nozzle lock-open device.
- Replace gasoline cap securely and wipe up spilled fuel.
- If fuel is spilled on clothing, change clothing immediately.

Adjust the auger / impeller housing height to clear gravel or crushed rock surface.

Never attempt to make any adjustments while the engine is running (except when specifically recommended by manufacturer).

Always allow unit and engine to adjust to outdoor temperature before clearing snow.

Operation

Disengage all controls before starting engine.

Never leave a running unit unattended. Always stop engine and remove key before leaving unit to prevent unauthorized use.

Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.

Moving and/or rotating parts can cut off body parts such as fingers or a hand. NEVER place your hands, other body part or clothing near any moving parts while unit is running.

Always keep hands away from all pinch points.

Do not touch parts which might be hot from operation. Allow parts to cool before attempting to maintain, adjust or service.

Thrown objects can cause injury. Check for weak spots on docks, ramps or floors. Avoid uneven work areas and rough terrain and stay alert for hidden hazards.

Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic.

After striking a foreign object, stop the engine, remove the wire from the spark plug, disconnect the cord on electric motors, thoroughly inspect the snow thrower for any damage, and repair the damage before restarting and operating the snow thrower.

If the unit should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.

Stop the engine whenever you leave the operating position, before unclogging the auger / impeller housing or discharge chute, and when making any repairs, adjustments or inspections.

When cleaning, repairing or inspecting the snow thrower, stop the engine and make certain the auger / impeller and all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the plug to prevent someone from accidentally starting the engine.

Do not run the engine indoors, except when starting the engine and for transporting the snow thrower in or out of the building. Open the outside doors; exhaust fumes are dangerous.

Never operate the snow thrower without proper guards, and other safety protective devices in place and working.

Always stand clear of the discharge area when operating this unit.

Never direct the discharge toward people or areas where injury or property damage can occur from thrown objects. Keep children and others away.

Do not overload the machine capacity by attempting to clear snow at too fast a rate.

Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when operating in reverse.

Do not operate in reverse unless absolutely necessary. Always back up slowly and look down and behind before and while backing.

Do not carry passengers.

Disengage attachment when not in use and when traveling from one work area to another.

Disengage power to the auger / impeller when snow thrower is transported or not in use.

Use only attachments and accessories approved by the manufacturer of the snow thrower (such as wheel weights, counterweights or cabs).

This product is equipped with an internal combustion engine. Do not use unit on or near any unimproved, forest-covered or brush-covered land unless exhaust system is equipped with a spark arrester meeting applicable local, state or federal laws. A spark arrester, if used, must be maintained in effective working order by operator.

Never operate the snow thrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk; never run.

Never operate unit after or during the use of medication, drugs or alcohol. Safe operation requires complete and unimpaired attention at all times.

Never allow anyone to operate this unit when their alertness or coordination is impaired.

Never touch a hot engine or muffler.

Avoid contact with sharp edges; sharp edges can cut.

Do not throw snow higher than necessary.

Clearing a Clogged Discharge Chute

Hand contact with the rotating auger / impeller inside the discharge chute is the most common cause of injury associated with snow throwers. Never use your hand to clean out the discharge chute.

To clear the chute:

- 1. SHUT THE ENGINE OFF!
- 2. Wait 10 seconds to be sure the auger / impeller blades have stopped rotating.
- 3. Always use a clean-out tool, not your hands.

Maintenance and Storage

Secure unit so it will not tip over during maintenance.

Before cleaning, removing clogs or making any inspections, repairs, etc., disengage clutch(es), stop engine, remove key, allow moving parts to stop and hot parts to cool.

Check shear bolts and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.

Check clutch and brake operation frequently.

Do not change engine governor settings and do not overspeed engine.

Adjust and service as required. Motion of drive wheels and auger / impeller must stop quickly when clutch levers are released.

Always maintain unit in safe operating condition.

Damaged or worn out muffler can cause fire or explosion.

Keep unit free of ice or other debris. Clean up oil or fuel spills.

Always keep protective structures, guards, and panels in good repair and secured in place. Never modify or remove safety devices.

Never store the machine with fuel in the fuel tank inside a building where ignition sources are present such as hot water heaters, space heaters or clothes dryers. Close fuel valve and allow the engine to cool completely before storing in any enclosure or covering the unit.

Always refer to operator's manual for important details if the snow thrower is to be stored for an extended period.

Maintain or replace safety and instruction labels as necessary.

Run the machine a few minutes after throwing snow to prevent freeze-up of the auger / impeller.

Personal Protection

Do not operate the equipment without wearing adequate winter garments. Avoid loose fitting clothing that can get caught in moving parts. Wear footwear that will improve footing on slippery surfaces.

Wear adequate safety gear, including safety glasses with side shields and protective gloves.

Do not wear loose clothing or jewelry, and tie back hair that may get caught in rotating parts.

NEVER attempt to unclog or clean unit while engine is running. Rotating auger / impeller can cause serious injury.

Protect eyes, face and head from objects that may be thrown from unit. Wear appropriate hearing protection.

Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect eyes from foreign objects that may be thrown from the machine.

Slope Operation

Exercise extreme caution when operating on slopes. DO NOT operate on steep slopes. DO NOT clear snow across the face of slopes; go up and down. Keep all movement on slopes slow and gradual.

Use a slow speed to avoid stops or shifts on slopes. Avoid starting or stopping on a slope. Do not park unit on a slope unless absolutely necessary. When parking on a slope always block the wheels.

Do not operate near drop-offs, ditches, or embankments. Unit can suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.

Fuel

DO NOT run engine in an enclosed area. Always provide good ventilation. Fumes from engine exhaust can cause injury or death.

Fuel is highly flammable and its vapors are explosive. Handle with care. Use only an approved gasoline container with an appropriately-sized dispensing spout.

No smoking, no sparks, no flames. Always allow engine to cool before servicing.

Never fill fuel tank when engine is running or hot from operation.

Never fill or drain fuel tank indoors.

Replace fuel cap securely and clean up spilled fuel.

Never fill fuel containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.

When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel on a trailer with a portable container, rather than from a gasoline dispenser nozzle.

Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.

If fuel is spilled on clothing, change clothing immediately. Properly remove fuel before tipping unit up onto housing to avoid spills.

Towing/Transporting

Always stop engine, remove key and close fuel valve or drain fuel when transporting unit on a truck or trailer.

Use extra care when loading or unloading unit onto trailer or truck. Secure unit chassis to transport vehicle. Never secure from rods or linkages that could be damaged. Do not transport machine while engine is running.

Accessories

Use only Ariens Company-recommended attachments or accessories that are designed for your unit and that are appropriate to your use and can be used safely in your application.

DRAINING FUEL SYSTEM

- 1. Move unit to an open, well-ventilated area with no flames or sparks.
- 2. Remove cap from fuel tank and siphon fuel into a clean gasoline container.
- 3. Reinstall cap onto fuel tank and tighten.
- 4. Start engine to burn remaining fuel in fuel system and leave engine running until it "runs dry" and stops. Refer to Operator's Manual for engine start procedure.
- 5. Stop engine, remove key and close fuel valve.

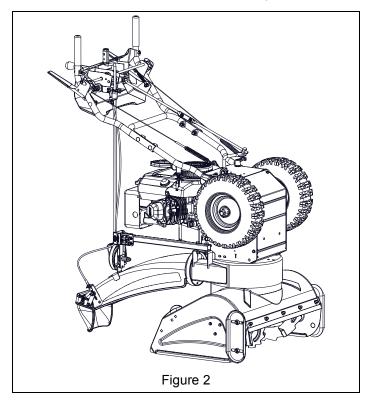
SERVICE POSITION



WARNING: AVOID INJURY. Before placing unit in service position, close fuel valve and drain fuel from tank and fuel system. See *Draining Fuel System* on page 8. Make sure unit is secure and will not tip.

See Figure 2.

IMPORTANT: NEVER store unit in service position.



BOTTOM COVER REMOVAL

NOTICE: Save all hardware for reinstallation.

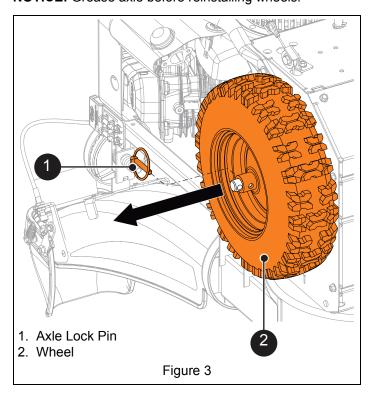


WARNING: AVOID INJURY. Before placing unit in service position, close fuel valve and drain fuel from tank and fuel system. See *Draining Fuel System* on page 8. Make sure unit is secure and will not tip.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Place unit in service position. See *Service Position* on page 8.

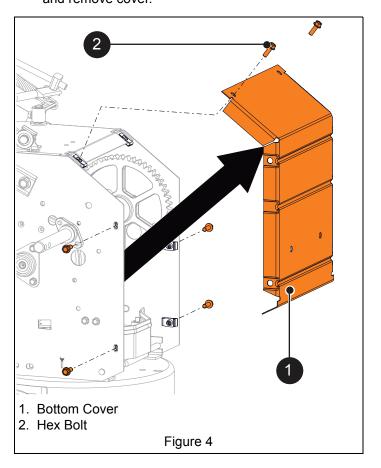
See Figure 3.

4. Remove lock pins from axle ends and remove wheels. **NOTICE:** Grease axle before reinstalling wheels.



See Figure 4.

5. Remove hardware retaining bottom cover to frame and remove cover.



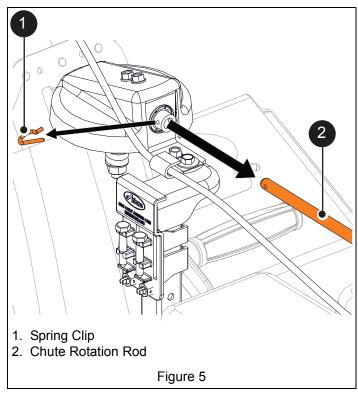
SEPARATE AUGER HOUSING FROM FRAME

NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.

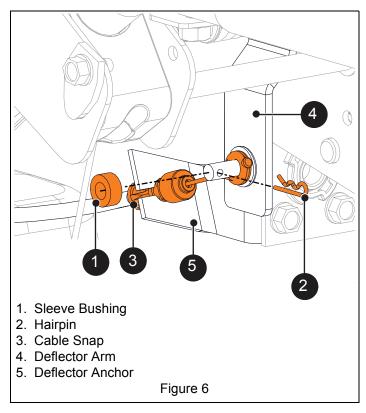
See Figure 5.

3. Remove spring clip from chute rotation rod and remove rod.



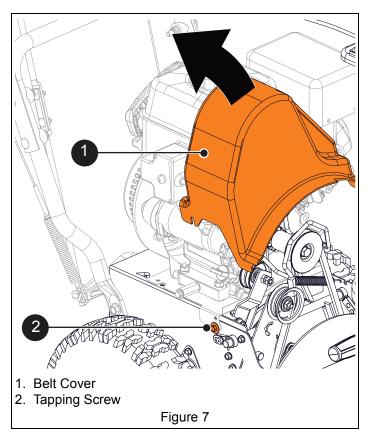
See Figure 6.

- Remove hairpin and sleeve bushing securing chute deflector cable to deflector arm under control panel.
- 5. Remove cable from deflector arm and remove cable snap from deflector anchor.



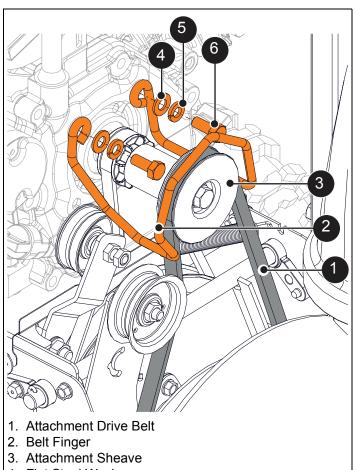
See Figure 7.

6. Loosen, but DO NOT remove hardware securing belt cover to unit and remove belt cover.



See Figure 8.

- 7. Remove hardware securing belt finger to engine and remove belt finger.
- 8. Remove attachment drive belt from attachment sheave.

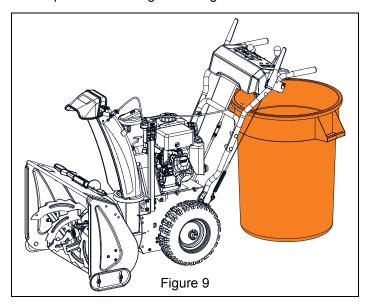


- 4. Flat Steel Washer
- 5. Locking Washer
- 6. Hex Bolt

Figure 8

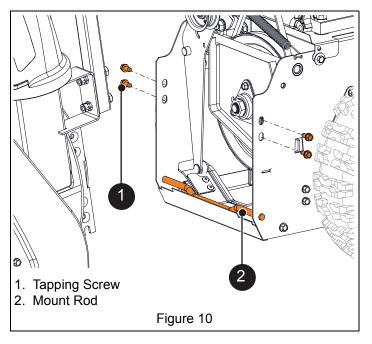
See Figure 9.

9. Position support, such as a trash can, under handlebars so tractor / frame remains upright when separated from auger housing.



See Figure 10.

- 10. Remove hardware securing auger housing to frame.
- 11. Tip auger housing apart from frame on mount rod and separate housing from unit.



ATTACHMENT DRIVE BELT REPLACEMENT

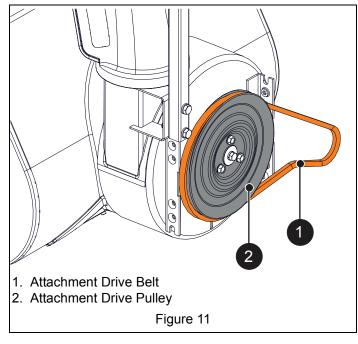
Remove Attachment Drive Belt

NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Separate auger housing from frame. See *Separate Auger Housing from Frame* on page 10.

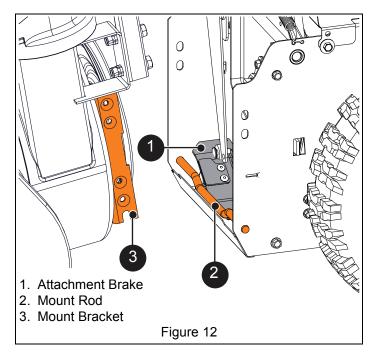
See Figure 11.

 Remove attachment drive belt from attachment drive pulley.



Install Attachment Drive Belt

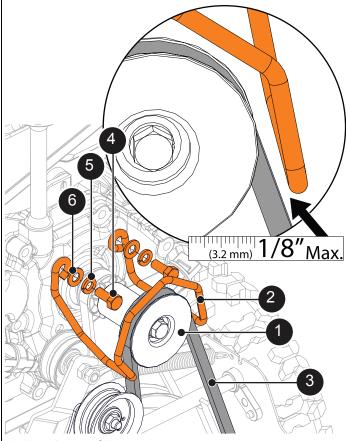
- Install belt onto attachment drive pulley.
 See Figure 12.
- Engage attachment clutch lever so attachment brake will not obstruct attachment drive pulley in step 3.
- 3. Tilt auger housing rear up and lower into frame so housing mount brackets sit on mount rod.



- 4. Release attachment clutch lever.
- Align top holes in housing mount brackets with holes in frame and reinstall, but DO NOT tighten four tapping screws.
- 6. Check tire pressure and adjust if necessary. Refer to Operator's Manual for specification.
- 7. Place unit on a flat, level surface.
- 8. Loosen hardware securing skid shoes to auger housing.
- 9. Torque tapping screws installed in step 5 to 16.8 25.2 lbf-ft (22.8 34.1 N•m).

See Figure 13.

- 10. Install belt onto attachment sheave.
- 11. Reinstall belt finger and secure with two flat steel washers, two locking washers and two hex bolts. Tighten hardware.
- 12. Check belt finger clearance:
 - Engage attachment clutch lever and make sure belt finger located opposite belt idler is less than 1/8"
 (3.2 mm) from belt, but not touching the belt.
 - If needed, adjust clearance by loosening hex bolts, repositioning belt finger, and tightening bolts.



- 1. Attachment Sheave
- 2. Belt Finger
- 3. Attachment Drive Belt
- 4. Hex Bolt
- 5. Locking Washer
- 6. Flat Steel Washer

Figure 13

- 13. Reinstall belt cover and tighten hardware.
- 14. Reinstall chute rotation rod into chute rotation gear and secure with spring clip.
- Reinstall chute deflector cable snap into deflector anchor and deflector cable eyelet onto deflector arm.
 Secure with sleeve bushing and hairpin. See Figure 6.
- Adjust skid shoes. Refer to Operator's Manual for adjustment procedure.
- 17. Adjust attachment clutch / brake. Refer to Operator's Manual for adjustment procedure.
- 18. Reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.



WARNING: AVOID INJURY. Auger / impeller must stop within 5 seconds when attachment clutch lever is released.

TRACTION DRIVE BELT REPLACEMENT

Remove Traction Drive Belt

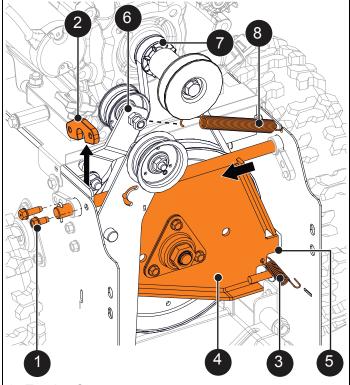
NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Separate auger housing from frame. See *Separate Auger Housing from Frame* on page 10.

See Figure 14.

- 4. Disconnect idler spring from traction drive idler.
- 5. Disconnect swing gate return spring from frame.
- 6. Remove hardware securing swing gate spacer to frame and remove swing gate spacer.
- 7. Slide swing gate left so swing gate tab is out of stop hole in frame.
- Move swing gate forward to access traction drive belt and remove belt.

NOTICE: It may be necessary to slowly pull recoil starter handle to turn traction sheave to remove belt.



- 1. Tapping Screw
- 2. Swing Gate Spacer
- 3. Swing Gate Return Spring
- 4. Swing Gate
- 5. Swing Gate Tab & Stop Hole
- 6. Traction Drive Idler
- 7. Traction Sheave
- 8. Idler Spring

Figure 14

Install Traction Drive Belt

See Figure 15.

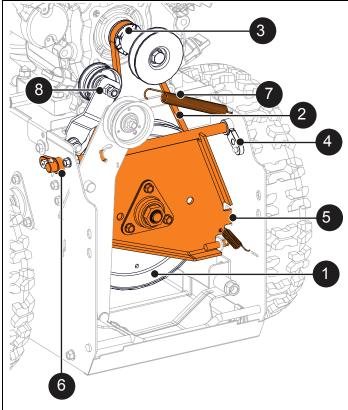
- 1. Install belt onto traction drive pulley.
- 2. Install belt onto traction sheave.
- 3. Move swing gate so swing gate tab aligns with stop hole in frame.

IMPORTANT: Make sure support bushing is correctly seated in frame and is flush with frame.

4. Slide swing gate right so top of swing gate inserts through support bushing and swing gate tab inserts through stop hole.

IMPORTANT: Make sure pivot bushing is correctly seated in frame and is flush with frame.

- 5. Reinstall swing gate spacer.
- 6. Align pivot bushing holes with holes in frame and swing gate spacer. Secure with two tapping screws.
- 7. Reconnect idler spring to traction drive idler.
- 8. Reconnect swing gate return spring to frame.



- 1. Traction Drive Pulley
- 2. Traction Drive Belt
- 3. Traction Sheave
- 4. Support Bushing
- 5. Swing Gate Tab & Stop Hole
- 6. Pivot Bushing
- 7. Idler Spring
- 8. Traction Drive Idler
- Figure 15

- 9. Reinstall attachment drive belt. See *Install Attachment Drive Belt* on page 12.
- 10. Adjust traction drive clutch. Refer to Operator's Manual for adjustment procedure.
- 11. Reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.

ATTACHMENT BRAKE REPLACEMENT

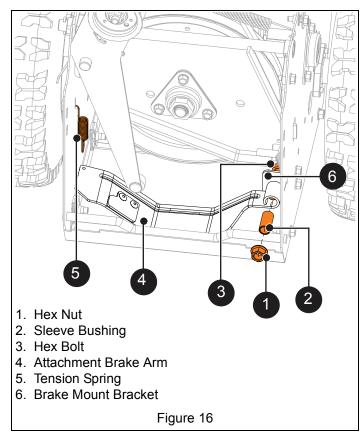
Remove Attachment Brake

NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Separate auger housing from frame. See *Separate Auger Housing from Frame* on page 10.

See Figure 16.

- 4. Remove hardware securing attachment brake arm to brake mount bracket.
- 5. Disconnect extension spring from attachment brake arm and remove attachment brake arm.



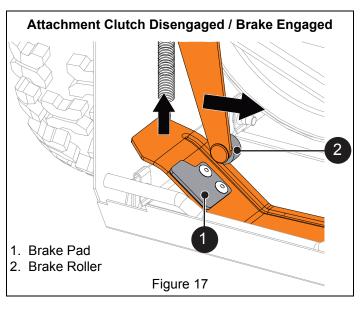
Install Attachment Brake

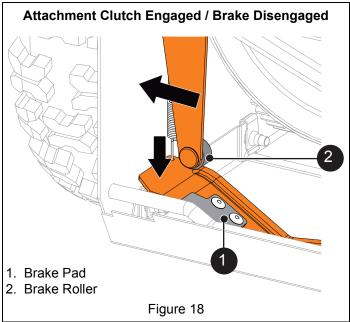
- 1. Align pivoting end of new attachment brake arm with hole in brake mount bracket.
- 2. Reinstall sleeve bushing into attachment brake arm.
- 3. Secure attachment brake arm to brake mount bracket with hex bolt and hex nut, but DO NOT overtighten.
- 4. Reconnect tension spring to attachment brake arm.

See Figures 17 and 18.

5. Engage and disengage attachment clutch to verify brake roller on attachment idler does not interfere with brake pad.

IMPORTANT: Make sure rolling action of brake roller does not seize.





6. Reinstall attachment drive belt. See *Install Attachment Drive Belt* on page 12.



WARNING: AVOID INJURY. Before placing unit in service position, close fuel valve and drain fuel from tank and fuel system. See *Draining Fuel System* on page 8. Make sure unit is secure and will not tip.

7. Place unit in service position. See *Service Position* on page 8.

8. Remove bottom cover. See *Bottom Cover Removal* on page 9.

See Figure 19.

- 9. Check attachment brake:
 - Brake must contact attachment belt when attachment clutch is disengaged.
 - Brake must be more than 1.6 mm away from attachment belt when attachment clutch is engaged.

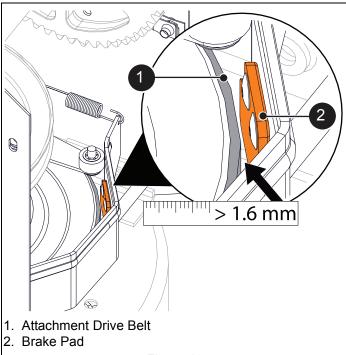


Figure 19

- 10. Reinstall bottom cover and secure with six hex bolts.
- 11. Reinstall wheels and secure with axle lock pins.
- 12. Return unit to operating position and fill fuel tank.
- 13. Adjust attachment clutch / brake. Refer to Operator's Manual for adjustment procedure.
- 14. Reconnect spark plug wire.



WARNING: AVOID INJURY. Auger / impeller must stop within 5 seconds when attachment clutch lever is released.

FRICTION DISC REPLACEMENT

Remove Friction Disc

NOTICE: Save all hardware for reinstallation.

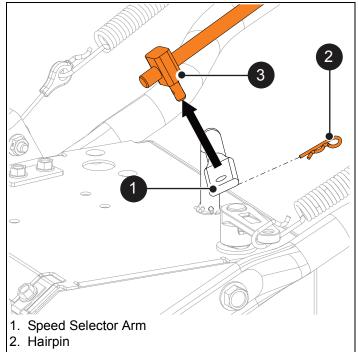


WARNING: AVOID INJURY. Before placing unit in service position, close fuel valve and drain fuel from tank and fuel system. See *Draining Fuel System* on page 8. Make sure unit is secure and will not tip.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Place unit in service position. See *Service Position* on page 8.
- 4. Remove bottom cover. See *Bottom Cover Removal* on page 9.

See Figure 20.

5. Remove hairpin securing adjustment pivot pin to speed selector arm and remove adjustment pivot pin from speed selector arm.

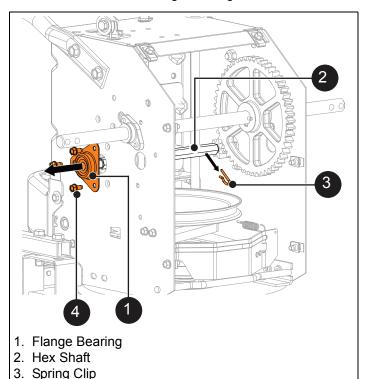


3. Adjustment Pivot Pin

Figure 20

See Figure 21.

- Remove spring clip from right side of hex shaft.
- 7. Remove hardware securing left flange bearing to frame and remove flange bearing.



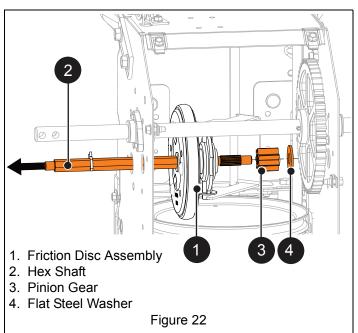
See Figure 22.

4. Tapping Screw

8. Slide hex shaft left and remove pinion gear and flat steel washer from hex shaft.

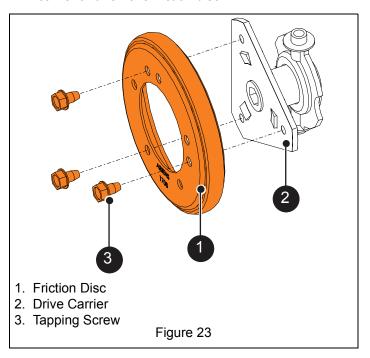
Figure 21

9. Continue sliding hex shaft left and remove friction disc assembly from unit.



See Figure 23.

10. Remove hardware securing friction disc to drive carrier and remove friction disc.

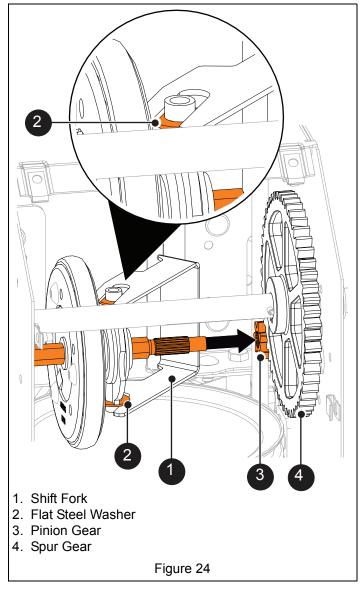


Install Friction Disc

- Install new friction disc to drive carrier with cup side positioned toward drive carrier.
- Secure friction disc to drive carrier with three tapping screws. Torque to 5 – 6 lbf-ft (7 – 8 N•m).

See Figure 24.

- 3. Reinstall friction disc assembly into shift fork. Make sure washers on assembly are positioned against shift fork as shown.
- 4. Reinstall hex shaft through frame and friction disc assembly.
- Reinstall pinion gear and flat steel washer onto hex shaft.
- 6. Align pinion gear with spur gear and insert hex shaft into frame and flange bearing.



- 7. Reinstall left flange bearing and secure with three tapping screws.
- 8. Reinstall spring clip into hex shaft.
- 9. Reinstall adjustment pivot pin into speed selector arm and secure with hairpin.
- 10. Reinstall bottom cover and secure with six hex bolts.
- 11. Reinstall wheels and secure with axle lock pins.
- 12. Return unit to operating position.
- 13. Fill fuel tank and reconnect spark plug wire.
- 14. Adjust speed selector lever. Refer to Operator's Manual for adjustment procedure.

AUGER REPLACEMENT

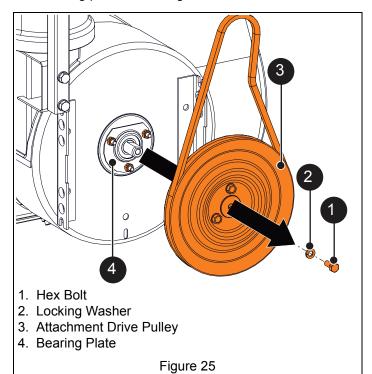
Remove Auger

NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Separate auger housing from frame. See *Separate Auger Housing from Frame* on page 10.

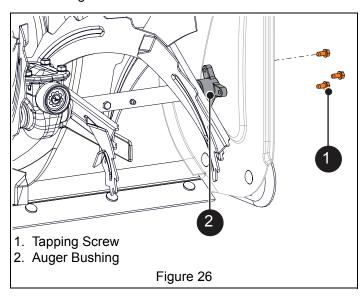
See Figure 25.

- Remove hardware securing attachment drive pulley assembly to auger housing and remove pulley assembly.
- Loosen, but DO NOT remove hardware securing bearing plate to housing.



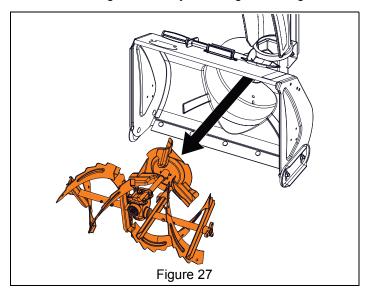
See Figure 26.

6. Remove hardware securing auger bushings to auger housing.



See Figure 27.

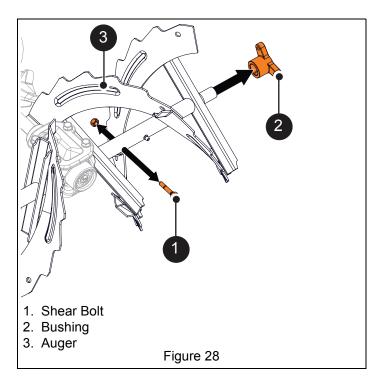
7. Remove auger assembly from auger housing.



See Figure 28.

- 8. Remove bushing from auger shaft end.
- 9. Remove shear bolt from auger shaft.
- 10. Slide auger off auger shaft.

NOTICE: If rust is present on auger shaft, remove with sand paper and wipe clean with oil.



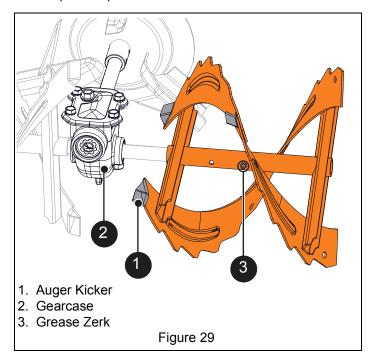
Install Auger

See Figure 29.

 Install auger onto auger shaft with auger kickers facing gearcase.

IMPORTANT: Make sure auger helix direction matches the original auger orientation.

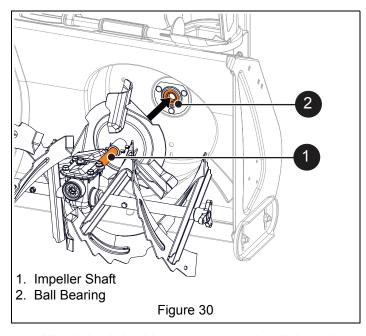
- 2. Apply grease to grease zerk and spin auger by hand to spread grease along auger shaft.
- 3. Repeat step 2.



- Align holes in auger with holes in auger shaft and reinstall shear bolt. Torque bolt to 5.8 – 12.2 lbf-ft (7.9 – 16.5 N•m). If torque wrench is unavailable, tighten until bolts no longer spin freely. DO NOT overtighten.
- 5. Reinstall bushing onto auger shaft end.

See Figure 30.

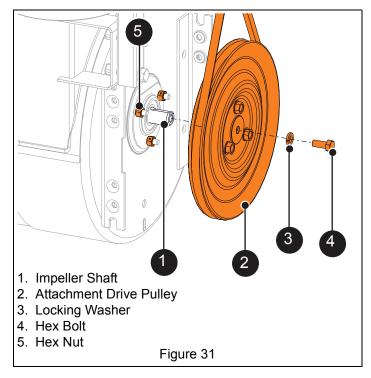
6. Reinstall auger assembly into auger housing so impeller shaft is seated in ball bearing at rear of housing.



7. Align holes in bushings on auger ends with holes in housing and secure with six tapping screws. Tighten hardware.

See Figure 31.

- 8. Tighten three hex nuts securing bearing plate to housing.
- 9. Align hub on attachment drive pulley with impeller shaft.
- 10. Reinstall attachment drive pulley assembly onto impeller shaft and secure with locking washer and hex bolt. Torque to 5.8 12.2 lbf-ft (7.9 16.5 N•m).



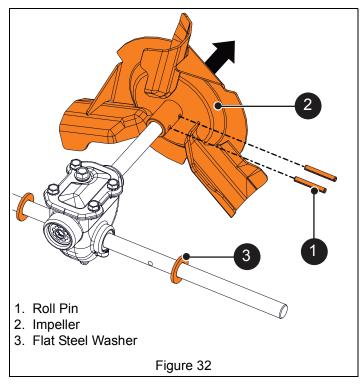
- 11. Reinstall attachment drive belt. See *Install Attachment Drive Belt* on page 12.
- 12. Reconnect spark plug wire.

AUGER GEARCASE REPLACEMENT

Remove Gearcase Assembly

NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Remove augers. See *Remove Auger* on page 18. See Figure 32.
- 4. Remove two flat steel washers from auger shaft.
- 5. Remove two roll pins securing impeller to impeller shaft and remove impeller.



Install Gearcase Assembly

- 1. Reinstall impeller onto new impeller shaft.
- 2. Align holes in impeller with holes in impeller shaft and reinstall roll pins.
- Reinstall one flat steel washer onto each side of auger shaft.
- 4. Reinstall augers onto new auger shaft. See *Install Auger* on page 19.
- 5. Reconnect spark plug wire.

IMPELLER REPLACEMENT

Remove Impeller

NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Separate auger housing from frame. See *Separate Auger Housing from Frame* on page 10.

See Figure 25.

- 4. Remove hardware securing attachment drive pulley and hub to auger housing and remove pulley assembly.
- Loosen, but DO NOT remove hardware securing bearing plate to auger housing.
- 6. Remove hardware securing auger bushings to auger housing.

See Figure 27.

7. Remove auger assembly from auger housing.

See Figure 32.

8. Remove two roll pins securing impeller to impeller shaft and remove impeller.

Install Impeller

- 1. Install new impeller onto impeller shaft.
- 2. Align holes in impeller with holes in impeller shaft and reinstall roll pins.

See Figure 30.

- 3. Reinstall auger assembly into housing so impeller shaft is seated in ball bearing at rear of auger housing.
- Align holes in bushings on auger ends with holes in auger housing and secure with six tapping screws.
 Tighten hardware.

See Figure 31.

- 5. Tighten three hex nuts securing bearing plate to auger housing.
- Align hub on attachment drive pulley with impeller shaft.
- Reinstall attachment drive pulley assembly onto impeller shaft and secure with locking washer and hex bolt. Torque to 5.8 – 12.2 lbf-ft (7.9 – 16.5 N•m).
- 8. Reinstall attachment drive belt. See *Install Attachment Drive Belt* on page 12.
- 9. Reconnect spark plug wire.

ENGINE REPLACEMENT

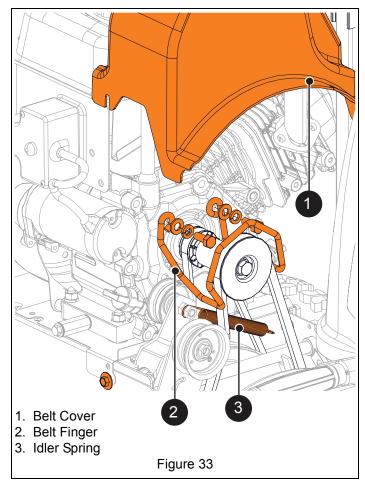
Remove Engine

NOTICE: Save all hardware for reinstallation.

- Drain gasoline from tank and fuel system. See Draining Fuel System on page 8.
- 2. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 3. Disconnect spark plug wire from engine.

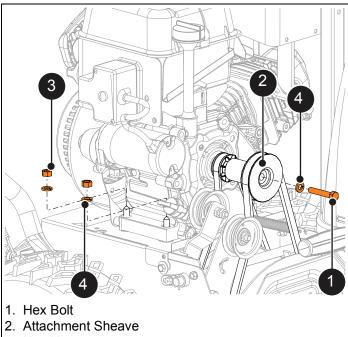
See Figure 33.

- 4. Loosen, but DO NOT remove hardware retaining belt cover to unit and remove belt cover.
- 5. Disconnect idler spring from traction drive idler and frame and remove spring.
- 6. Remove hardware retaining belt finger to engine and remove belt finger.



See Figure 34.

- 7. Remove hardware securing attachment sheave to crankshaft.
- 8. Remove hardware securing engine to frame.



- 3. Hex Nut
- 4. Locking Washer

Figure 34

See Figure 35.

- Remove attachment sheave and traction sheave from crankshaft.
- Move attachment drive belt and traction drive belt off crankshaft.
- 11. Lift engine off frame and lower onto a flat, level surface.

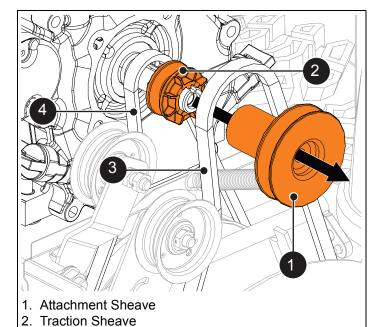


Figure 35

EN - 22

3. Attachment Drive Belt4. Traction Drive Belt

Install Engine

- Lower engine onto frame so weld screws in frame insert through mounting holes in engine base.
- 2. Reinstall four locking washers over weld screws and secure with hex nuts. Torque to 8.8 13.2 lbf-ft (11.9 17.9 N•m).
- Align traction sheave key with crankshaft keyway and reinstall traction sheave onto crankshaft.
- 4. Reinstall traction drive belt onto traction sheave.
- 5. Reinstall idler spring to traction drive idler and frame.
- Align attachment sheave key with crankshaft keyway and reinstall attachment sheave onto crankshaft.
 Secure with locking washer and hex bolt and tighten hardware.
- 7. Reinstall attachment drive belt onto attachment sheave.
- 8. Reinstall belt finger and secure with two flat steel washers, two locking washers and two hex bolts as shown in Figure 13.
- 9. Check belt finger clearance:
 - Engage attachment clutch lever and make sure belt finger located opposite belt idler is less than 1/8" (3.2 mm) from belt, but not touching the belt.
 - If needed, adjust clearance by loosening hex bolts, repositioning belt finger, and tightening bolts.
- 10. Reinstall belt cover and tighten hardware.
- 11. Adjust attachment clutch / brake. Refer to Operator's Manual for adjustment procedure.
- 12. Adjust traction drive clutch. Refer to Operator's Manual for adjustment procedure.
- 13. Fill fuel tank and reconnect spark plug wire.

IMPORTANT: Check all adjustments after first use.



WARNING: AVOID INJURY. Auger / impeller must stop within 5 seconds when attachment clutch lever is released.

TRACTION DRIVE CABLE REPLACEMENT

Remove Traction Drive Cable

NOTICE: Save all hardware for reinstallation.

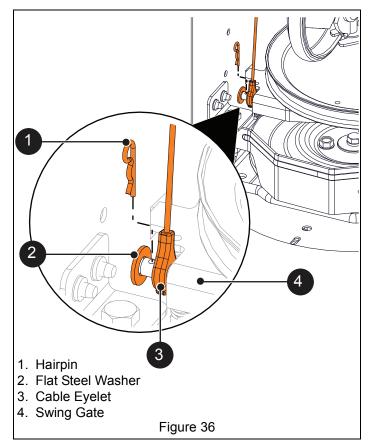


WARNING: AVOID INJURY. Before placing unit in service position, close fuel valve and drain fuel from tank and fuel system. See *Draining Fuel System* on page 8. Make sure unit is secure and will not tip.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Place unit in service position. See *Service Position* on page 8.
- 4. Remove bottom cover. See *Bottom Cover Removal* on page 9.

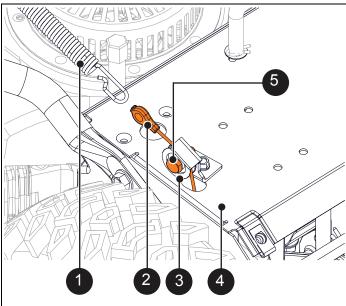
See Figure 36.

5. Remove hairpin and flat steel washer securing cable eyelet to swing gate and remove cable.



See Figure 37.

- Disconnect lower traction drive cable from upper traction drive cable.
- 7. Loosen, but DO NOT remove shoulder bolt retaining cable pulley to cable pulley bracket.
- 8. Remove cable from cable pulley and remove cable from unit.



- 1. Upper Traction Drive Cable
- 2. Lower Traction Drive Cable
- 3. Cable Pulley
- 4. Back Cover
- 5. Shoulder Bolt

Figure 37

Install Traction Drive Cable

- 1. Connect lower traction drive cable to upper traction drive cable.
- 2. Feed cable end through hole in back cover.
- 3. Align cable with cable pulley and tighten shoulder bolt.
- 4. Install cable eyelet onto swing gate and secure with flat steel washer and hairpin.
- 5. Reinstall bottom cover and secure with six hex bolts.
- 6. Reinstall wheels and secure with axle lock pins.
- 7. Return unit to operating position.
- 8. Adjust traction drive clutch. Refer to Operator's Manual for adjustment procedure.
- 9. Fill fuel tank and reconnect spark plug wire.

AXLE BUSHING REPLACEMENT

Remove Bushing

NOTICE: Save all hardware for reinstallation.

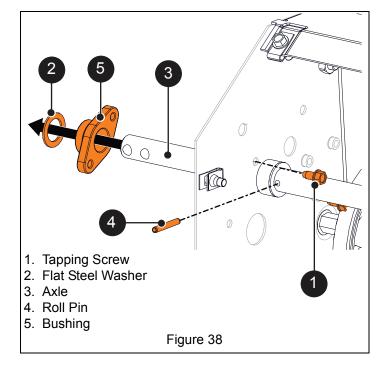


WARNING: AVOID INJURY. Before placing unit in service position, close fuel valve and drain fuel from tank and fuel system. See *Draining Fuel System* on page 8. Make sure unit is secure and will not tip.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Place unit in service position. See *Service Position* on page 8.
- 4. Remove bottom cover. See *Bottom Cover Removal* on page 9.

See Figure 38.

- 5. Remove flat steel washer from axle.
- Remove hardware securing bushing to frame. If replacing bushing on right side of frame, remove roll pin from left side of axle and slide axle and spur gear left to access hardware.
- 7. Remove bushing.

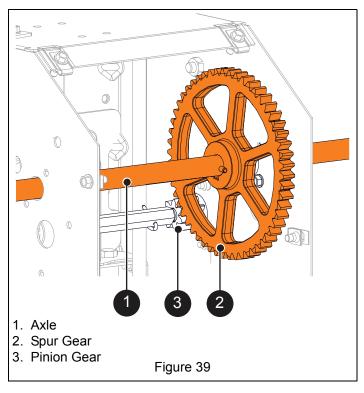


Install Bushing

- Install new bushing onto axle and align holes with holes in frame.
- 2. Secure bushing to frame with two tapping screws from inside frame and tighten hardware.

See Figure 39.

 If reinstalling bushing on right side of frame, align spur gear with pinion gear, center axle and reinstall roll pin into axle.



- 4. Reinstall flat steel washer onto axle.
- 5. Reinstall bottom cover and secure with six hex bolts.
- 6. Reinstall wheels and secure with axle lock pins.
- 7. Return unit to operating position.
- 8. Fill fuel tank and reconnect spark plug wire.

CHUTE GEAR REPLACEMENT

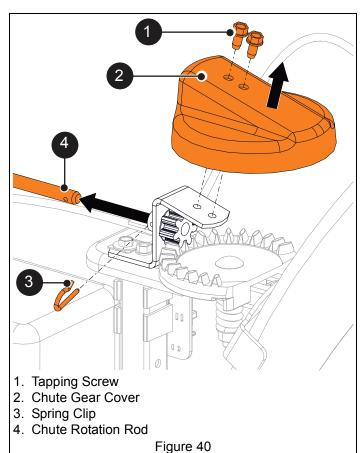
Remove Pinion Gear

NOTICE: Save all hardware for reinstallation unless specified otherwise.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.

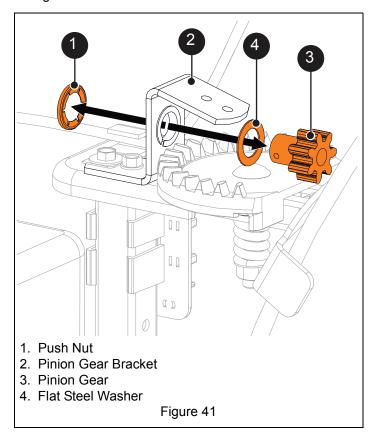
See Figure 40.

- 3. Remove hardware retaining chute gear cover to pinion gear bracket and remove cover.
- 4. Remove spring clip from chute rotation rod and remove rod.



See Figure 41.

- Remove push nut from pinion gear and discard.
- Remove pinion gear and flat steel washer from pinion 6. gear bracket.



Install Pinion Gear

- Install flat steel washer onto new pinion gear. 1.
- 2. Align pinion gear with chute rotation gear and insert through pinion gear bracket. Secure with new push nut.
- Reinstall chute rotation rod and secure with spring
- Reinstall chute gear cover and secure with two tapping screws.
- Reconnect spark plug wire. 5.

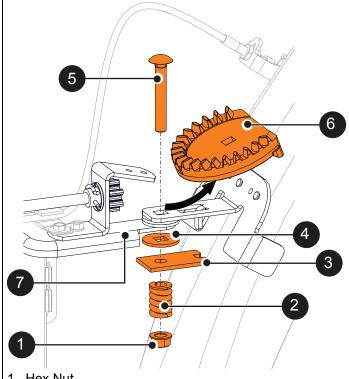
Remove Chute Rotation Gear

NOTICE: Save all hardware for reinstallation.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Support discharge chute so it remains upright.
- 4. Remove hardware retaining chute gear cover to pinion gear bracket and remove cover.

See Figure 42.

- Remove hex nut from round head square neck bolt. Catch compression spring, friction plate, and friction washer as they fall off bolt.
- Remove round head square neck bolt from pedestal 6. plate and remove chute rotation gear.



- 1. Hex Nut
- 2. Compression Spring
- 3. Friction Plate
- 4. Friction Washer
- 5. Round Head Square Neck Bolt
- 6. Chute Rotation Gear
- 7. Pedestal Plate

Figure 42

Install Chute Rotation Gear

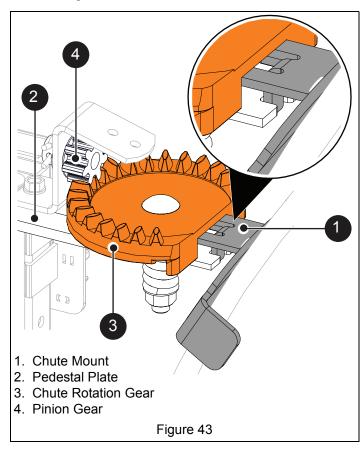
1. Position discharge chute facing forward.

See Figure 43.

- 2. Position chute rotation gear on chute mount so gear teeth at halfway point align with pinion gear.
- 3. Align hole in chute gear with holes in chute mount, flat steel washer, friction washer, and pedestal plate.

NOTICE: A flat steel washer and friction washer are positioned between chute mount and pedestal plate and are not to be removed.

4. Insert round head square neck bolt through hole in chute gear.



5. Reinstall friction washer, friction plate, compression spring, and hex nut onto bolt. Tighten hex nut.

IMPORTANT: Make sure notch in friction plate fits around tab in chute mount.

- 6. Reinstall gear cover and secure with two tapping screws.
- 7. Adjust discharge chute rotation. Refer to Operator's Manual for adjustment procedure.
- Reconnect spark plug wire.

SCRAPER BLADE REPLACEMENT

Remove Scraper Blade

NOTICE: Save all hardware for reinstallation.

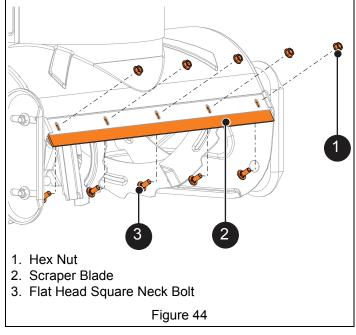


WARNING: AVOID INJURY. Before placing unit in service position, close fuel valve and drain fuel from tank and fuel system. See *Draining Fuel System* on page 8. Make sure unit is secure and will not tip.

- 1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
- 2. Disconnect spark plug wire from engine.
- 3. Place unit in service position. See *Service Position* on page 8.

See Figure 44.

4. Remove hardware securing scraper blade to auger housing and remove scraper blade.



Install Scraper Blade

- Position new scraper blade inside auger housing and align holes with holes in housing.
- 2. Insert five flat head square neck bolts through holes from inside auger housing and secure with hex nuts.
- 3. Return unit to operating position.
- Adjust scraper blade and skid shoes. Refer to Operator's Manual for adjustment procedures.
- 5. Fill fuel tank and reconnect spark plug wire.

SERVICE PARTS

Description	Part No.
Spark Plug	21547400
Attachment Drive Belt	07200513
Traction Drive Belt	07200603
Friction Disc	00170800

SERVICE RECORD

DATE	SERVICE PERFORMED	NOTES



655 West Ryan Street Brillion, WI 54110 920-756-4688 Fax 920-756-2407 www.ariens.com www.ariens.com.au

A WARNING A

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.